

# *csd*

## *csd*

(Coalition Shared JISR data, interfaces and services), is a multi-user client-server software that provides persistent storage and dissemination of standardized products in the intelligence domain. It also provides the stack of JISR COI and Core Services required to allow the IRM&CM workflow in the JISR cycle. All according to the MAJIC standards and principles.



GMV  
[www.gmv.com](http://www.gmv.com)

 [www.facebook.com/infoGMV](https://www.facebook.com/infoGMV)  
 [@infoGMV](https://twitter.com/infoGMV)

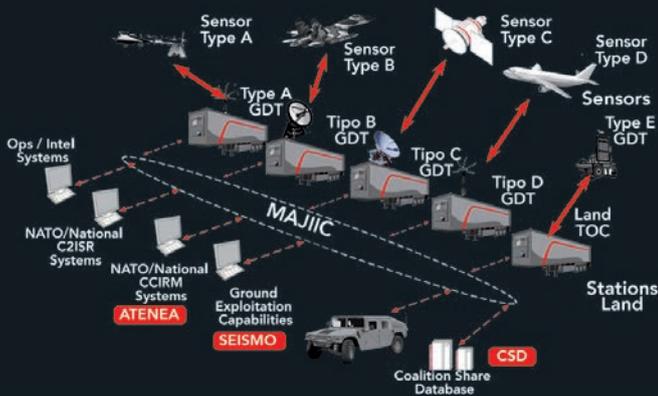
**gmv**<sup>®</sup>  
INNOVATING SOLUTIONS

## JISR

Joint Intelligence, Surveillance and Reconnaissance (JISR) is an activity that synchronizes and integrates the planning and operation of all collection capabilities with exploitation and processing and the dissemination of the resulting information to the right person, at the right time, in the right format, in direct support of current and future operations. JISR encourages the dynamic, agile and coordinated use of platforms, sensors and systems to support a wide range of staff functions.

## MAJIIC

MAJIIC stands for Multi-Intelligence All-Source Joint Intelligence Surveillance and Reconnaissance Interoperability Coalition. The MAJIIC program is a multination program, formed by 9 NATO nations aiming to maximize the military use of Intelligence, Surveillance, Target Acquisition and Reconnaissance (ISTAR) resources. For that purpose, the MAJIIC program develops the tactics, techniques and procedures (TTPs) and the architecture and technical common data format to achieve that aim.



## MAJIIC OBJECTIVES

- Improve Commanders Situation Awareness.
- Improve the shared use of coalition sensors (GMTI, SAR, EO/IR, Motion Imagery, Link16 and ESM tracks).
- Sensor data management in Near Real Time.
- Coordinating assignment, planning, monitoring and management of Information requirements.
- Develop network based interoperability (NEC).
- Support NATO and national doctrine development.

## MAJIIC ISR PRODUCTS

- Imagery SAR, EO, IR (STANAG 4545 NSIF).
- GMTI – Ground Moving Target Indicator (STANAG 4607).
- Video (STANAG 4609).
- LINK 16 (STANAG 5516):
  - PPLIs (msg. J2.2, J2.3, J2.5).
  - Tracks (J3.0, J3.1, J3.2, J3.3, J3.5).
  - Tracks Management (J7.0, J7.1, J7.2, J7.3).
- CESMO:
  - ESM (STANAG 5516) (J3.7, J14.0, J14.2).
  - NEDB/EOB (STANAG 6009).
- HUMINT:

- HUMINTREP (STANAG 2578 – AintP-5).
- PENTAGRAM (STANAG 2433 – AintP-3).

- Exploitation Reports (xxEXREP):
  - STANAG 3377.
  - Targets Category (STANAG 3596).
  - Reliability and Credibility of Information Sources (STANAG 2511).
  - Country Codes (STANAG 1059).
- Intelligence Reports (STANAG 2511):
  - INTREP.
  - INTSUM.
- Intelligence Plans (STANAG 3277):
  - Intelligence Collection Plan (ICP).
  - Collection Task/Requirements List (CTL/(CRL)).
  - Collection and Exploitation Plan (CXP).
- Request For Information - RFI (STANAG 2149).
- ISR Request - ISRR (STANAG 2149).

## GMV IN MAJIIC

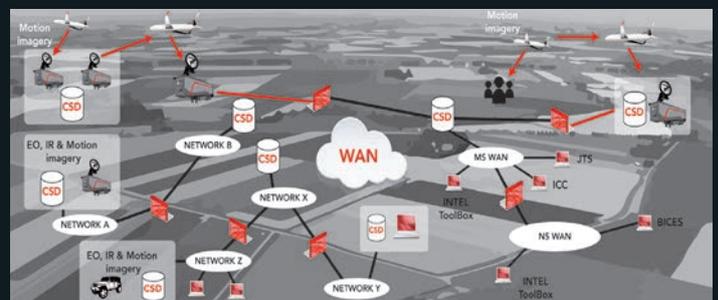
Within the MAJIIC framework, GMV has developed the following products interoperable with any other subsystems develop under this program:

- **seismo** – Exploitation application and scenario simulator.
- **csd** – Coalition shared database.
- **atenea** – Intelligence Requirements Management & Collection Management (IRM&CM).

## csd

The **csd** (Coalition Shared Database) system provides the Dissemination capabilities of the Intelligence Cycle.

The **csd** is an implementation of STANAG 4559, NATO Standard Library Interface that defines the access to a shared and distributed data repository, with persistent storage of the ISR products contemplated in MAJIIC to provide support to the intelligence activities.



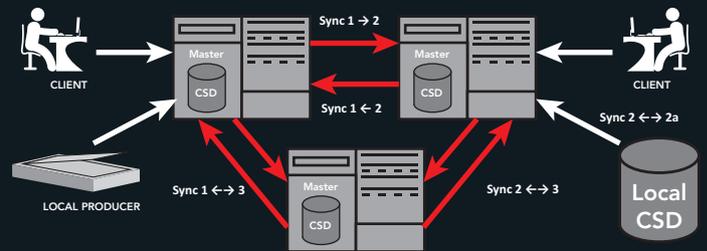
The access to **csd** is based on a client-server architecture. The Client (implemented as part of the **seismo** exploitation and **atenea** IRM&CM systems) provides access to the capabilities offered by the Server. The **csd** server provides persistence and access to the ISR products stored in the database.

MAJIIC establishes a **cSD** server's distributed architecture, in such a way that a **cSD** server is located in each network point where a high amount of data is entered (node); in this way it is guaranteed that the data is almost immediately made available to the coalition. Each product is characterized by a set of metadata which describes it and facilitates the access to the useful content. The **cSD** distributed servers synchronize the information in the metadata that describe the products, so the clients connected to the **cSD** can access to the different shared products.

There are two types of **cSD**:

- Local **cSD**.
- Master **cSD**.

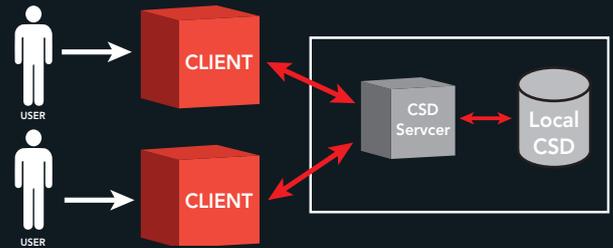
The local **cSD** accepts connections of clients connected to the same local area network (LAN) and generally does not provide the complete capabilities of a Master **cSD**. In the other side, the Master **cSD** server provides additional capabilities for the synchronization of metadata with other Master **cSD** and support the exchange of ISR products through a wide area networks (WAN).



The **cSD** servers can be employed by the coalition systems to solve aspects regarding to the availability and operational use of data, such as:

- Initialize databases, or complement the national database with the products generated by the coalition systems.
- Recovery of products after a system shut down or disconnection.
- Access to different ISR products to provide an operational picture in near real time (NRT) or based in historical information.
- Access to the ISR products to analyse if there is an answer to the intelligence needs based on the information already available on the databases.

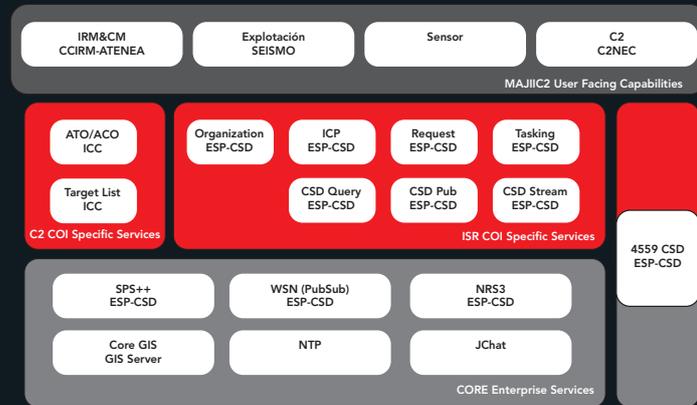
The **cSD** database can be accessed simultaneously by an arbitrary number of clients.



### **cSD** CAPABILITY OF INTERACTING WITH CLIENTS

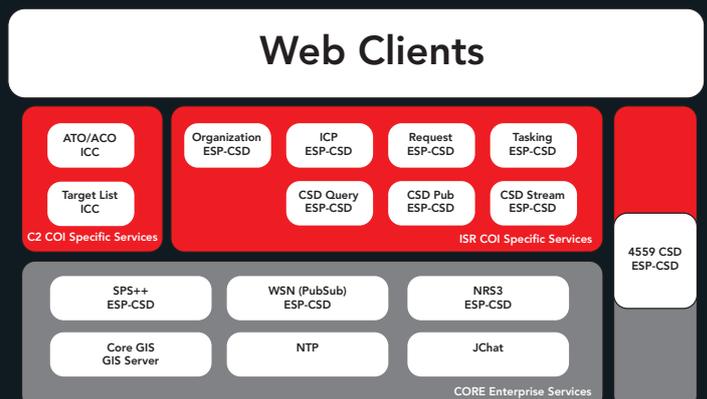
The server system **cSD** provides a client interface in accordance with the NSIL protocol set up in STANAG 4559, and in accordance with data model defined in the CSD IDD MAJIIC document. The access interface enables the clients to perform the following functions:

- Product consultation.
- Product subscription.
- Product publication and perform associations between products.
- Request of ISR products download.
- ISR product update (modification and cancellation).
- Request an image clipping (chipping).



The **cSD** server's architecture is designed based on the principle of bandwidth efficient control to allow disposing of and disseminating the ISR products to all the operational theatre. The main benefit provided by the **cSD** is that it avoids the network replication mechanisms to enable data dissemination. To achieve it, the **cSD** servers synchronize the metadata information that describes the products they contain. This enable a client connected to a concrete **cSD** to have access to all the products available in the network, not needing that the products themselves be replicated in all the **cSD** servers of the Operational Theatre, but being provided only when requested.

The **cSD** servers enable an intelligent management of the products, providing to the clients access to information of low capacity (metadata, thumbnails, overviews), in such a way that a client can decide to request or not a determined product to unload it, so optimizing the bandwidth use. In the case that a product unload is requested, the **cSD** servers locate the product in the network and provide it to the client reducing to a minimum the use of bandwidth in the network. Additionally, the **cSD** server provides the capability of performing an image chipping with the objective of disseminating exclusively the necessary information and to optimize the use of the MAJIIC network.



## csd SUPPORTED PRODUCTS

The different types of ISR products contemplated in MAJIIC and supported by the **csd** are:

- Information Requirements – IRs (XML):
  - Requests for Information (RFIs).
  - Priority Information Requirements (PIRs).
  - Specific Information Requirements (SIRs).
  - Essential Elements of Information (EIs).
  - Indicators.
- Areas of Interest (AOIs).
- Intelligence Collection Plans:
  - Information Requirements (IR).
- Collection and Exploitation Plans – CXPs (XML):
  - Collection Task List (CTL).
- Chat messages.
- Sensor products:
  - Images (SAR, EO/IR) – STANAG 4545.
  - Video (EO/IR) – STANAG 4609.
  - GMTI – STANAG 4607.
  - ESM – STANAG 5516.
- Exploitation reports – ISREXREP.
- Organization Documents MAJIIC.
- Systems Deployment status reports – SDS (XML).
- Tactical Information Link 16 – STANAG 5516:
- Documents (PDF, TXT, MS Office).
- Electronic Order of Battle - EOB (XML).

Additionally, the CSD model is extended to give support to the following types of products not contemplated in MAJIIC:

- Reconnaissance Reports:
  - ALZREP (XML).
  - BRIDGEREP (XML).
  - DELTREP (XML).
  - DZREP (XML).
  - HELLSREP (XML).
  - ROUTEREP (XML).
  - SPOTREP (XML).
- Battle Damage Assessment report (BDA) (XML).
- Intelligence reports:
  - INTSUM (XML).
  - INTREP (XML).
  - INTREQ (XML).

Therefore, the **csd** server system provides support for the persistent storage and the dissemination of the different ISR products, enabling the creation of associations between them. In this way it is facilitated a traceability from the information requirements generated by the IRM&CM to the exploitation products generated by the exploitation systems, closing in this way the intelligence cycle.

## csd CAPABILITIES

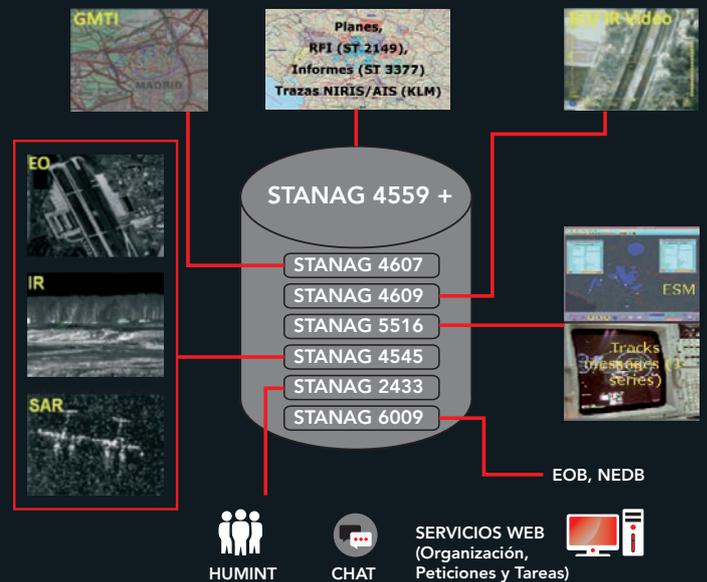
The Master **csd** system provides the following capabilities in support of the MAJIIC architecture:

- Client interaction general capabilities.
- Synchronization capabilities.
- Support to the ISR products:
  - Information Requirements Management support.
  - Collection and Exploitation Plan support.
  - Exploitation reports support.

- Reconnaissance and Damage assessment reports support.
- Intelligence Reports support.
- Document support.
- Systems Deployment Status support.
- Tactical Information support.
- Sensor products support.
- Streaming disseminated products support.
- Support for the exchange of products through different security domains.
- Support for the exchange of EOB (Electronic Order of Battle).
- Support to the cooperation and post analysis tools.
- Administration functionalities.

## INTEROPERABILITY

**csd** has been developed in accordance with the mandatory standards in the MAJIIC program being interoperable with any other ISR tool developed under the same standards.



## CLIENT REFERENCES

*Spanish Ministry of Defense*

- DGAM.
- EMACON.
- Ejército de Tierra.
- Armada.
- Ejército del Aire.
- INTA.

*Portuguese Ministry of Defense*

- Marina Portuguesa.
- Ejército del Aire.
- Instituto Hidrográfico.

*International Organizations*

- OTAN.
- EDA.
- EC.
- CNES.
- EMSA.